

**TWO NEW *DICRANOCENTRUS* FROM NEPAL AND A KEY TO  
THE INDIAN AND NEPALESE SPECIES  
(COLLEMBOLA: ENTOMOBRYIDAE)**

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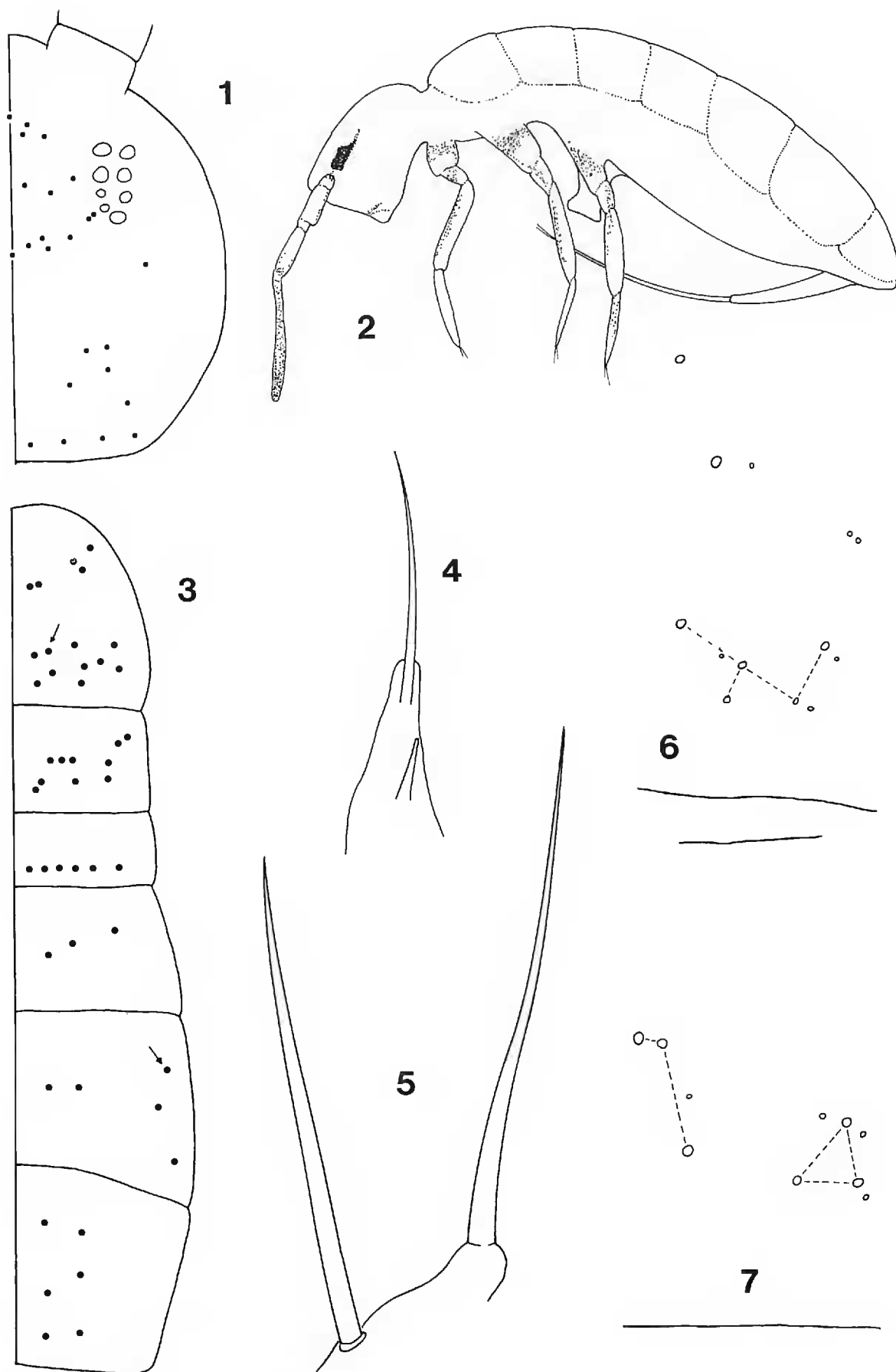
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Through the courtesy of Dr. L. Deharveng of the Laboratoire de Zoologie, Université Paul Sabatier, Toulouse, France, I have received part of the Orchesellinae collected by him during a 1977 expedition to Central Nepal. The specimens, which are from an area some 33 km west of the Annapurna Himal and south of Mustang mountain ranges, represent two new species of *Dicranocentrus* closely related to the six species of this genus known from Nepal and Northeast India.

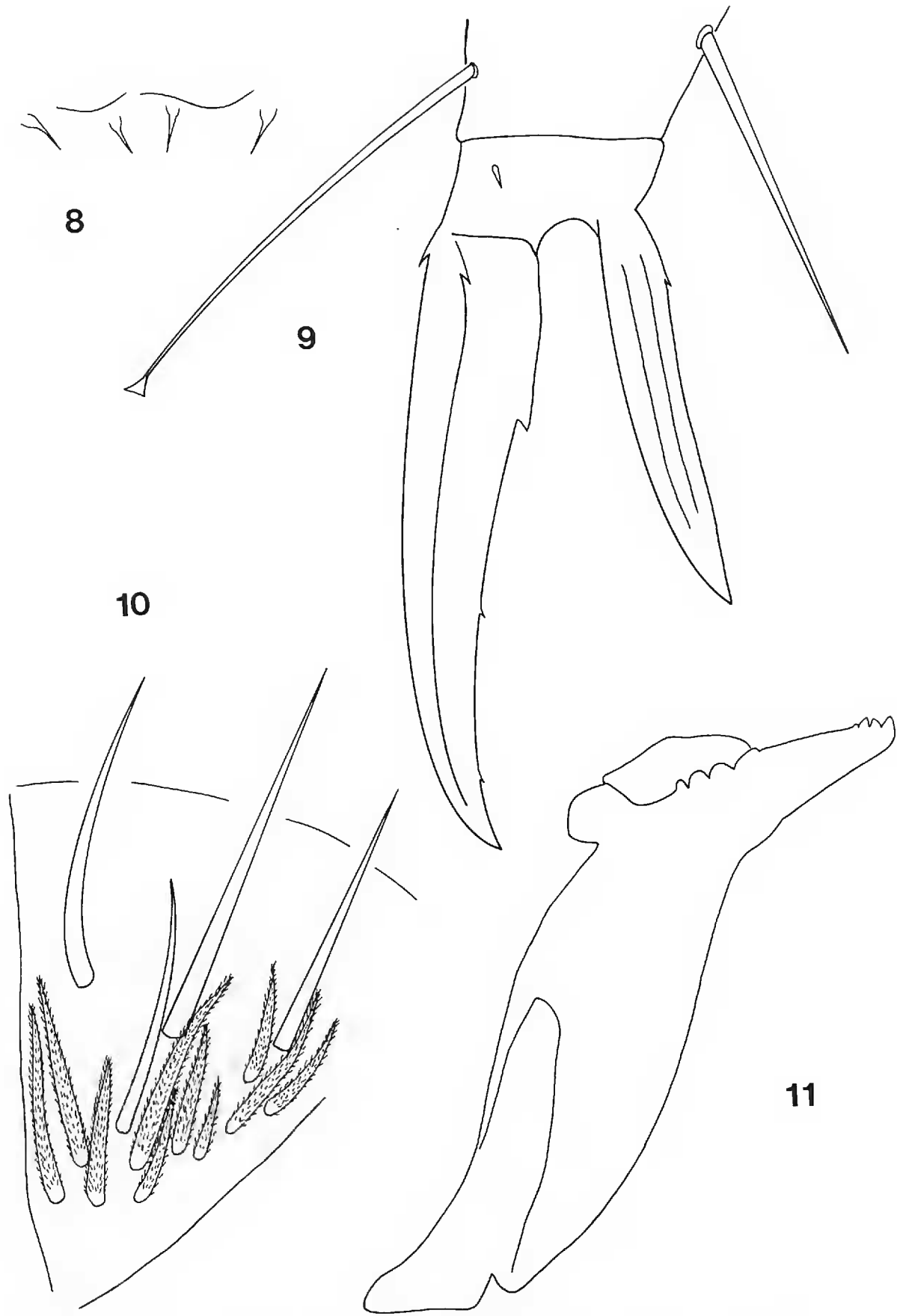
***Dicranocentrus deharvengi*, new species**

Habitus and distribution of violet pigment as in Fig. 2. Length up to 3.0 mm. First 4 antennal segments (Ant. 1-4), head, body, all segments of legs, colophore, and dorsal and ventral sides of manubrium covered by brown, strongly striated oval scales. Ant. 6 missing in all specimens. Pin seta seen on apex of regenerated Ant. 5. Head macrochaetotaxy as in Fig. 1 (note absence of  $S_2$ ). Eyes 8 + 8 on dark patches, g and h reduced in diameter. Labral papillae (Fig. 8) of type I, rounded with spinelike processes. Chaetotaxy of labial triangle as in Fig. 10; 9-11 setae on posterior row. Some individuals with unequal number of setae on the two triangles; one specimen (Fig. 10) with a smooth seta on left posterior row but all setae ciliated in other specimens and in right triangle of same specimen. Maxillary palp as in Fig. 5. Differentiated seta of outer labial papilla as in Fig. 4, placed far back on its papilla. All setae of venter of head ciliated. Tibiotarsi without smooth setae. Metathoracic claws as in Fig. 9; inner margin of unguis with a pair of well developed teeth and 2 very small unpaired teeth (drawn larger). Unguiculus with a very small basal tooth. Tenent hair long, apically clavate. Body macrochaetotaxy as in Fig. 3, setae indicated by arrows missing in one specimen. No smooth setae on dorsum of manubrium (but most setae have fallen off). Each dental lobe with a long macrochaetalike plumose seta. Dental spines absent. Mucro with 2 teeth and a basal spine.

*Diagnosis.*—The species is close to the Nepalese *D. janetscheki* (Yosii, 1971) and to *D. fraternus* (Mari Mutt and Bhattacharjee, 1980), a species from the vicinity of Shillong, Northeast India. It may be separated from the



Figs. 1-7. *D. deharvengi* n. sp. Fig. 1. Dorsal head macrochaetotaxy, each dot represents a seta. Fig. 2. Habitus and distribution of violet pigment. Fig. 3. Dorsal body macrochaetotaxy; setae indicated by arrows are missing in one specimen. Fig. 4. Outer labial papilla. Fig. 5. Maxillary palp. Fig. 6. Th. 2-macrochaetotaxy of left side. Fig. 7. Th. 3-macrochaetotaxy of left side.



Figs. 8–11. *D. deharvengi* n. sp. Fig. 8. Labral papillae (type I). Fig. 9. Metathoracic claws. Fig. 10. Chaetotaxy of labial triangle. Fig. 11. Right mandible.

former by the chaetotaxy of Th. 3 and Abd. 1 (see Mari Mutt, 1979:47, Fig. 47) and by the color pattern (compare Fig. 2 with Yosii, 1971:128, Fig. A or Mari Mutt, 1979:29, Fig. 20). From the latter it may be distinguished only by the chaetotaxy of Th. 3, Abd. 1 and Abd. 4.

*Comments.*—Figures 6 and 7 detail the macrochaetotaxy of the left half of Th. 2 and Th. 3 of a smaller specimen. The sockets left by some of the macrochaetae are distinctly smaller than those left by other macrochaetae. If only the larger sockets are considered, the resulting pattern is very similar or even identical to that of other species. For an example, compare Fig. 7 with the chaetotaxy of Th. 3 of *D. marias*, a Central American and Caribbean species (Mari Mutt, 1979:45, Fig. 77c). The same pattern of Th. 3 is found in the Indian *D. singularis* Mari Mutt and Bhattacharjee (1980).

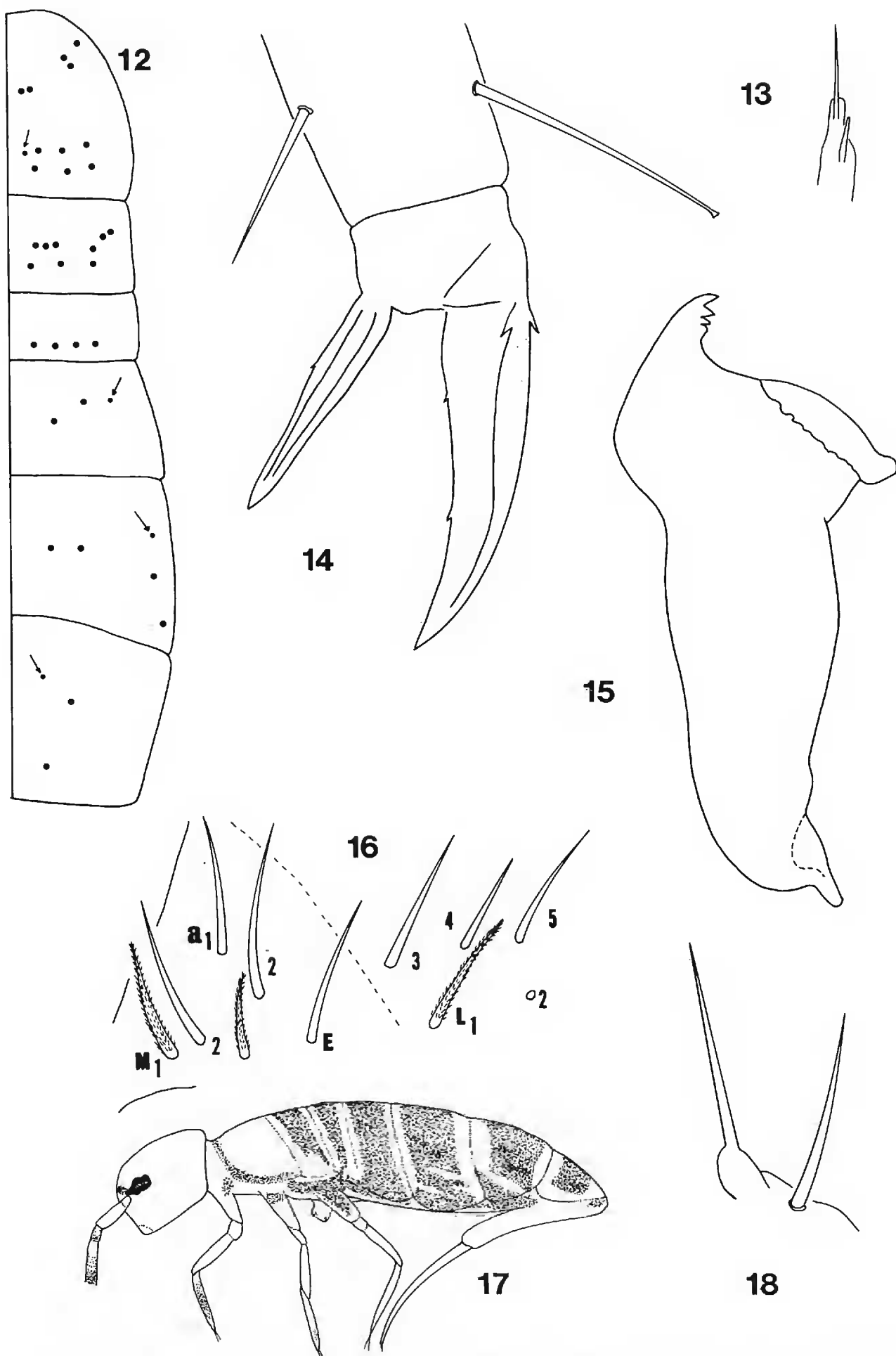
*Material examined.*—Just beyond Gorges Kali Gandaki, 1900 m, Sept. 27, holotype and 16 paratypes. As preceding but under *Cannabis*, 1 paratype. Tukuiche, 2600 m, Sept. 28, 4 paratypes. As preceding but 2500 m, 1 paratype. Kalopani, 2500 m, Sept. 27, under *Cupressus*, 2 paratypes. Tirkedunje, 1500 m, Sept. 24, 4 paratypes.

The holotype and five paratypes are deposited at the British Museum (Natural History). Other paratypes are in the author's collection.

#### *Dicranocentrus violaceus*, new species

Habitus and distribution of violet pigment as in Fig. 17. Length up to 1.5 mm. Scales distributed as in preceding species (except impossible to determine presence on dorsum of manubrium). Ant. 5 and Ant. 6 missing. Arrangement of eyes, head macrochaetotaxy, and labral papillae as in *D. deharvengi*. Chaetotaxy of labial base as in Fig. 16, posterior row of triangle with 1 smooth and up to 4 ciliated setae. Maxillary palp as in Fig. 18. Differentiated seta of outer labial papilla (Fig. 13) not placed as far back on its papilla (compare with Fig. 4). Setae of postlabial quadrangle smooth but a ciliated seta located between them; rest of venter of head mostly with ciliated setae. Tibiotarsi without smooth setae. Claws as in Fig. 14, inner margin of unguis with a basal pair and a distal unpaired tooth. Unguiculus with a small outer tooth not placed as proximally as in *D. deharvengi*. Tenent hair clavate. Body macrochaetotaxy as in Fig. 12. No smooth setae seen on dorsum of manubrium but many setae have fallen off. Dental lobe with a long macrochaetalike plumose seta. Dental spines absent. Mucro with 2 teeth and a basal spine.

*Diagnosis.*—The species comes closest to the micronesian *D. inermoides* (Uchida) (Uchida, 1944) and to *D. indicus* (Bonet, 1930), sensu Yosii (1966): a widely distributed oriental species occurring in Nepal. From the first it may be readily separated by the color pattern, presence of only smooth setae on venter of the head, and by the chaetotaxy of Th. 3, Abd. 1 and Abd. 4 (see Mari Mutt, 1979:47, Fig. 92). From the latter it may be



Figs. 12–18. *D. violaceus* n. sp. Fig. 12. Dorsal body macrochaetotaxy; setae indicated by arrows are of smaller diameter and length than other setae. Fig. 13. Outer labial papilla. Fig. 14. Metathoracic claws. Fig. 15. Left mandible (see text for comments). Fig. 16. Base of labium; setae named according to Gisin's system. Fig. 17. Habitus and distribution of violet pigment. Fig. 18. Maxillary palp.

distinguished only by the chaetotaxy of Th. 3 and Abd. 1 (see Yosii, 1966:372, Fig. C or Mari Mutt, 1979:47, Fig. 91) and some aspects of the color pattern (compare Fig. 17 with Fig. A in Yosii, 1966:372).

*Comments.*—Two very unusual mandibles (e.g. Fig. 15) were found while studying a dissected head that had been mounted in Marc Andre II over a year earlier. The head of these mandibles is greatly expanded and the teeth are facing the molar area. Two additional specimens were dissected recently and these possessed normal mandibles like those of *D. deharvengi* (Fig. 11). With so few specimens at hand it was not advisable to continue dissections; I could not determine whether this type of mandible is common, teratological, or caused by preservation in this medium, which tends to deteriorate rapidly in atmospheres with high humidity.

*Material examined.*—Birethanti, 1000 m, Sept. 23, holotype and 4 paratypes. Tirkedunje, 1500 m, 2 paratypes (*D. deharvengi* was also collected at this locality).

The holotype and 2 paratypes are at the British Museum (Natural History). Other paratypes are in the author's collection.

#### Key to the Indian and Nepalese *Dicranocentrus*

- |  |   |
|--|---|
| 1. Dental spines present .....   | 2   |
| Dental spines absent .....   | 3   |
| 2. Spines along inner margin of dentes; Abd. 6 of adults greatly prolonged posteriorly (see Mari Mutt, 1979:27, Fig. 8); Ant. 5 about 1.5 × length of Ant. 6 ..... | <i>cercifer</i> (Imms)                        |
| Spines along inner and outer margin of dentes; Abd. 6 not prolonged posteriorly; Ant. 5 slightly shorter than Ant. 6 ...   | <i>spinus</i> Prabhoo                         |
| 3. Abd. 1 with 2 or 3 macrochaetae per side .....  | 4   |
| Abd. 1 with 4 or 6 macrochaetae per side .....   | 6   |
| 4. Abd. 1 and Th. 2 with 2 and 5 macrochaetae respectively; dental lobe without plumose seta (with a smooth erect seta) .....                                      |   |
| .....  | <i>singularis</i> Mari Mutt and Bhattacharjee |
| Abd. 1 and Th. 2 with 3 and 9 macrochaetae respectively; dental lobe with an erect plumose seta .....  | 5   |
| 5. Posterior half of Th. 2 with 7 macrochaetae; body segments with blue band near posterior margins; unguis with an unpaired tooth .....                           | <i>indicus</i> Bonet                          |
| Posterior half of Th. 2 with 6 macrochaetae; body unpigmented; unguis with 2 unpaired teeth .....  | <i>nepalensis</i> Mari Mutt                   |
| 6. Abd. 1 with 4 macrochaetae .....  | 7   |
| Abd. 1 with 6 macrochaetae .....   | 9   |
| 7. Th. 3 (Fig. 12) with 9 macrochaetae, innermost posterior seta missing (compare with Fig. 3); posterior labial row with up to 4 ciliated                         |   |

- and 1 smooth seta; pigmentation as in Fig. 17 .....  
 ..... *violaceus*, new species
- Th. 3 with 10 macrochaetae (e.g. Fig. 3); posterior labial row with  
 more setae (7-9), all of which are ciliated; pigmentation not as  
 above ..... 8
8. Th. 2 and Abd. 2 with 9 and 2 macrochaetae respectively; posterior  
 half of Th. 3 and all of Abd. 1 intensely pigmented while rest of  
 body is practically devoid of pigment resulting in a striking banded  
 pattern (see Yosii, 1971:128, Fig. A or Mari Mutt, 1979:29, Fig.  
 20) ..... *janetscheki* Yosii
- Th. 2 and Abd. 2 with 6-7 and 3 macrochaetae respectively; body  
 either thoroughly pigmented or unpigmented .....  
 ..... *fraternus* Mari Mutt and Bhattacharjee
9. Unguis without inner teeth; tenent hair lanceolate, very short (see  
 Mari Mutt and Bhattacharjee, 1980, Fig. 25); head and body with  
 numerous macrochaetae (27 and 65 setae respectively on each  
 side, see Mari Mutt and Bhattacharjee, 1980, Fig. 26, 34) .....  
 ..... *pilosus* Mari Mutt
- Unguis (Fig. 9) with a pair of basal and 2 distal unpaired teeth along  
 inner margin; tenent hair clavate, long; head and body with fewer  
 macrochaetae (24 and 45 respectively per side; see Fig. 3)  
 ..... *deharvengi*, new species

### Acknowledgment

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